2004-2005 Winter Spotter Guide

NOAA's National Weather Service White Lake, Michigan

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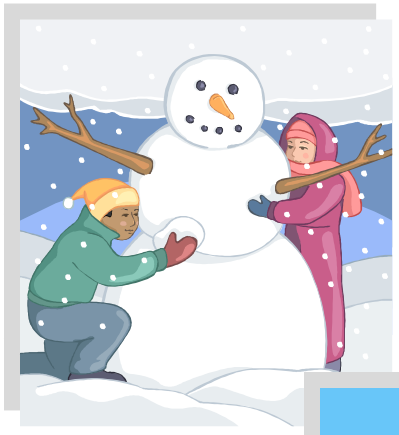


NWS White Lake
Attn: Winter Weather Spotter Program
9200 White Lake Rd
White Lake, MI 48386
248-625-3309

w-dtx.webmaster@noaa.gov
Subject: Winter Spotter

Toll Free Spotter Hotline
1-800-808-0006

www.crh.noaa.gov/dtx

Winter Weather Terms

Flurries: Light snowfall of short duration. No accumulation.

Snow showers: Snow falling with variable intensity for brief periods of time. Some accumulation possible.

Snow squalls: Brief, intense snow showers accompanied by strong gusty winds. Significant accumulation, especially with lake effect.

Blowing snow: Wind-driven snow causing reduced visibilities and significant drifting. This may be falling snow and/or snow on the ground that is picked up by the wind.

Sleet: Ice pellets caused by rain drops aloft that freeze before hitting the ground.

Freezing precipitation: Rain or drizzle that falls as liquid but freezes on contact with surface having a temperature below freezing.

Wind chill: Based on the rate of heat loss from exposed skin caused by the combined effects of wind and cold.

Winter Warnings, Advisories, and Watches

The National Weather Service issues a variety of winter warnings, advisories, and watches to prepare individuals for threatening winter weather. Broadly speaking, these products fall into two categories — those in which precipitation is not the reason for the statement issuance, and those in which precipitation occurrence requires a statement issuance. Table 1 presents the non-precipitation products, while the precipitation products are listed in Table 2.

Table 1. Non-precipitation winter weather warnings, advisories, and watches.

Statement	Criteria
Frost Advisory	Conditions conducive to the formation of frost, occurring during the growing season.
Freeze Warning	Freezing temperatures occurring during the growing season
Dense Fog Advisory	Widespread visibilities reduced to less than or equal to 1/4 mile in fog.
High Wind Advisory	Sustained non-convective winds greater than or equal to 30 mph lasting for one hour or longer, or winds greater than or equal to 45 mph for any duration.
High Wind Watch	Potential for sustained non-convective winds greater than or equal to 40 mph and/or gusts greater than or equal to 58 mph.
High Wind Warning	Sustained non-convective winds greater than or equal to 40 mph and/or gusts greater than or equal to 58 mph.

Table 2. Winter weather warnings, advisories, and watches with precipitation occurring.

Statement	Criteria
Lake Effect Snow Warning	Pure lake effect snow that is forecast to produce (average of the forecast range): * in **Lower Michigan** — snow greater than or equal to 6 inches in 12 hours, or greater than or equal to 8 inches in 24 hours. * in **Upper Michigan** — snow greater than or equal to 8 inches in 12 hours, or greater than or equal to 10 inches in 24 hours.
Winter Weather Advisory	A synoptic scale storm producing a combination of winter weather that poses a hazard, but does not meet warning criteria. For specific weather elements: * Snow - A synoptic scale storm producing snow (average of forecast range) > 3 inches but less than the warning criteria (6 inches in Lower Michigan and 8 inches in Upper Michigan) in 12 hours. * Snow and Blowing Snow - A combination of snow and blowing snow that causes significant inconveniences, but does not meet warning criteria. The event could result in a life-threatening situation if caution is ***not*** exercised * Freezing Rain - Freezing rain of such intensity and/or duration that causes significant inconveniences, but does not meet warning criteria. If caution is ***not*** exercised, then life-threatening situations could evolve. * Lake Effect Snow - Pure lake effect snow event that is forecast to produce snow (average of forecast range) > 3 inches but less than the warning criteria (6 inches in Lower Michigan and 8 inches in Upper Michigan) in 12 hours
Wind Chill Advisory	A 10 mph or greater wind and wind chill forecast of –20°F to –29 °F.
Wind Chill Warning	A 10 mph or greater wind and wind chill forecast of –30 °F or less.
Winter Storm Watch	The potential of (average of the forecast range): * in **Lower Michigan** — snow greater than or equal to 6 inches in 12 hours, or greater than or equal to 8 inches in 24 hours. * in **Upper Michigan** — snow greater than or equal to 8 inches in 12 hours, or greater than or equal to 10 inches in 24 hours. Lesser amounts for mixed precipitation, blowing snow, etc.
Winter Storm Warning	A winter storm producing (average of the forecast range): * in **Lower Michigan** — snow greater than or equal to 6 inches in 12 hours, or greater than or equal to 8 inches in 24 hours. * in **Upper Michigan** — snow greater than or equal to 8 inches in 12 hours, or greater than or equal to 10 inches in 24 hours. Lesser amounts for mixed precipitation, blowing snow, etc.
Blizzard Warning	Sustained wind or frequent wind gusts to 35 mph or more and considerable falling and/or blowing snow reducing visibility frequently below 1/4 mile. (Duration: three hours or longer.)
Ice Storm Warning	Freezing rain producing a significant and possibly damaging accumulation of ice (normally an ice accumulation of 1/4 inch or greater).

What to Report

Winter weather presents many challenges to the weather spotter. Table 3 provides reporting guidelines for the various types of winter weather you're likely to encounter.

Table 3. Reporting guidelines for winter weather spotters.

Weather Event	Reporting Criteria
Snow (see next section "How to Measure Snow" for details on measuring snow.)	* When the first inch has fallen * Follow-up reports for each additional 2 inches. * Storm total. * 12-hour totals between 7 am and 9 am and between 7 pm and 9 pm whenever an inch or more has fallen
Rain	* Amounts of one inch or greater within a 24 hour period.
Ice	* Freezing rain or sleet starts to fall * Ice causes serious impact on travel * Ice causes damage, such as to power lines and/or tree limbs Try to estimate the amount of glazing — e.g., 1/4 inch, 1/2 inch, etc.
High Wind (The Beaufort Scale may be helpful in estimating wind speeds. See Table 4.)	* Any wind gust 40 mph or greater * Any damage caused by high winds
Dense Fog	* Visibility 1/4 mile or less * Fog which has an impact on travel
Flooding	* Any flooding that covers roads or threatens property, whether from precipitation, ice jams, or coastal flooding. * Any ice jam
Forecast	* Any time precipitation falls and it is not in the NWS forecast * Any time fog (less than one mile) occurs and it is not in the forecast * Any time a different type of precipitation falls than what is in the NWS forecast. For example, rain was forecast and snow and/or sleet occurs.

Table 4. The Beaufort scale.

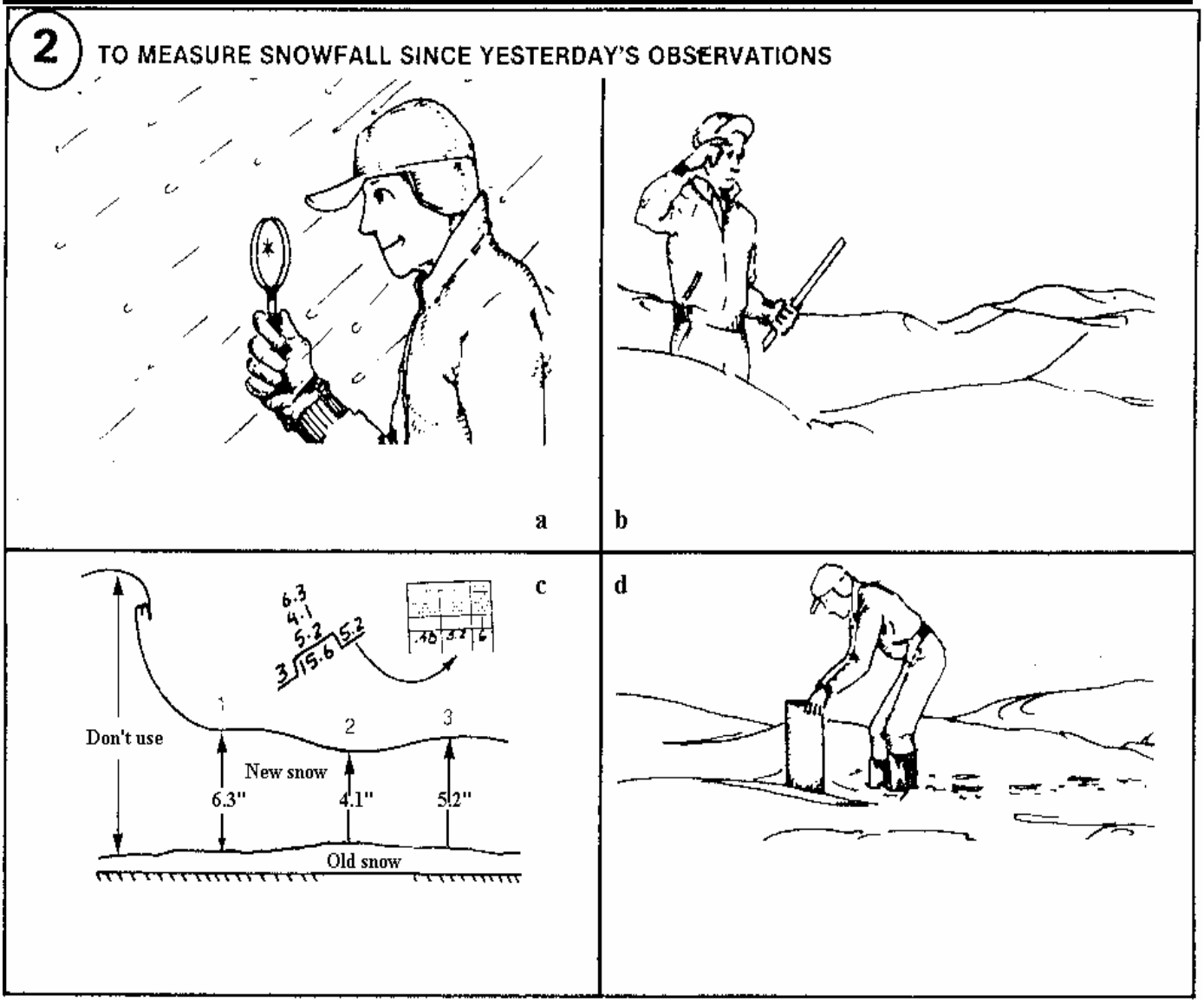
Wind Speed (mph)	Visible Effect
25-31	Large branches in motion
32-38	Whole trees in motion
39-54	Twigs break off trees
55-72	Damage to chimneys and television antennas; shallow-rooted trees are pushed over.

How to Measure Snow

Ideally, snowfall should be measured on a snowboard. A snowboard is simply a 2 foot square board (1/2 to 3/4 inch plywood works well) usually painted white. If a snowboard is not available, then a deck or the ground can be used. Snow often melts as it lands. If snow continually melts as it lands, and the accumulation never reaches 0.1 inch on your measuring surface, snowfall should be recorded as a trace (T).

It is essential to measure snowfall (and snow depth) in locations where the effects of blowing and drifting are minimized. Finding a good location where snow accumulates uniformly simplifies all other aspects of the observation and reduces the numerous opportunities for error. In open areas where windblown snow cannot be avoided, several measurements (five to 10 usually do the trick) may often be necessary to obtain an average depth and they should not include the largest drifts. In heavily forested locations, try and find an exposed clearing in the trees. Measurements beneath trees are inaccurate since large amounts of snow can accumulate on trees and never reach the ground. Figure 1 shows the proper snowfall measuring technique.

Figure 1. Snowfall measurement technique. **Fig. 1a.** If the snow melts as it falls, enter a trace for the event. **Fig. 1b.** Use good judgment in selecting spots where the snow is least affected by drifting. **Fig. 1c.** If not using a snowboard, then take several measurements where the snow is least affected by drifting. In this case, do not use the highest drifted snow, but instead use the three measurements of 6.3, 4.1, and 5.2 inches to yield a reported snowfall of 5.2 inches. **Fig. 1d.** This figure depicts the technique for determining the water equivalent of snowfall. This is not a responsibility of snowfall spotters.



How to Stay in Touch

NOAA's National Weather Service (NWS) provides numerous guidance, forecast, and watch and warning services on a routine and non-routine schedule designed to keep the public, emergency management officials and the spotter community informed on the potential for – and/or occurrence of – severe winter weather. Primary sources for official NWS winter severe weather guidance, watch, warning and forecast products are the NWS's Climate Prediction Center (CPC), Hydrometeorological Prediction Center (HPC), and, of course, the local Detroit/Pontiac NWS office in White Lake, Michigan. The most timely and complete access to these products is provided primarily through the All Hazards NOAA Weather Radio.

PRODUCTS

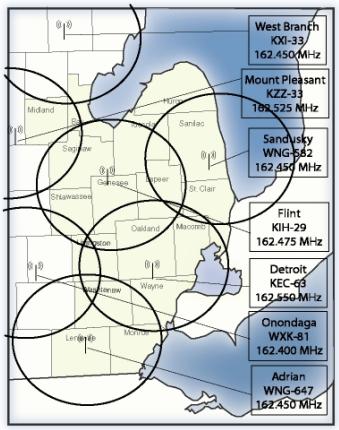
The CPC, in Camp Springs, Maryland monitors and predicts short-term climate fluctuations. A wonderful product from the CPC is the weekly **Hazards Assessment** highlighting expected weather threats including temperature, wind, precipitation, drought, and fire. This web-based product is available through the following web site:
http://www.cpc.ncep.noaa.gov/products/predictions/threats/

The NWS's HPC, also in Camp Springs, is charged with monitoring and forecasting large scale winter storms. In this role, the HPC issues daily heavy snow and freezing precipitation outlooks for the U.S.

The Detroit/Pontiac NWS office in White Lake, Michigan serves the 17 counties of southeast lower Michigan with watch, warning, and forecast information 24 hours a day, 7 days a week. The office is the official provider of warning, advisory, and watch products listed in Tables 1 and 2.

PRODUCT ACCESS

All Hazards NOAA Weather Radio (NWR) provides complete watch, warning, and forecast services. NWR broadcasts directly from the NWS office in White Lake, Michigan via transmitters in Southfield, Clio, Adrian and Sandusky Michigan. If the warning is within the official broadcast range of about 40 miles, a 1050 Hertz alarm tone precedes the warning. NWR is also able to integrate into the new Emergency Alert System (EAS), using the Specific Area Message Encoder (SAME).



The NWS disseminates all watch, warning and forecast products to the public through a variety of media. Most of the products are available over the Internet. The Detroit/Pontiac NWS homepage can be found at:
http://www.crh.noaa.gov/dtx/

How to Report

There are three ways to report your spotter information — toll-free telephone, packet radio, and Internet. Details on each of these methods are provided below.

Toll-free telephone. Winter weather spotters can reach the Detroit/Pontiac National Weather Service office via our dedicated toll-free spotter line. The number is **800-808-0006**. This number is to be used by spotters to report winter weather conditions meeting the criteria listed in Table 3.

Packet radio (K8DTX-5, 145.76 MHz). Spotter reports received via packet radio are printed out in the NWS office. These reports provide an accurate, permanent record of weather events.

Internet. Remember, the only way to reach the NWS in real-time is through the toll-free telephone number and/or packet radio. You may submit your report via the Internet. A new service called ***E-Spotter*** allows you to transmit your reports online and in real-time. The reports may be addressed to:

http://www.crh.noaa.gov/espotter

Or directly via e-mail at:
nwslidtx@noaa.gov